

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

4-06-80
OCD-ARTESIA

5/25/06
FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-0559539
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Harvard Petroleum Corp. 101557		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 936 Roswell, NM 88202		8. Lease Name and Well No. 135579 James 20 Federal, Well No. 4
3b. Phone No. (include area code) 505/ 523-1581		9. API Well No. 80-025-38523
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 1980' FNL & 660' FWL Unit At proposed prod. zone same		10. Field and Pool, or Exploratory Triste Draw Delaware, West ✓
14. Distance in miles and direction from nearest town or post office* 36.5 miles east of Carlsbad, NM		11. Sec., T., R., M., or Blk. and Survey or Area Sec. 20-T23S-R32E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660'	16. No. of Acres in lease 1440	12. County or Parish Lea
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1320'	17. Spacing Unit dedicated to this well 40	13. State NM
19. Proposed Depth 8700'	20. BLM/BIA Bond No. on file NM-1109	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3675 GL	22. Approximate date work will start* October 16, 2006	23. Estimated duration 3 - 4 weeks
24. Attachments Carlsbad Controlled Water Basin		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature <i>George R. Smith</i>	Name (Printed/Typed) George R. Smith	Date 5/24/06
Title Agent for: Harvard Petroleum Corp.		
Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) Don Peterson	Date OCT 02 2006
Title ACTING FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Lease Responsibility Statement: Harvard Petroleum Corp. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

KRS
George R. Smith, agent

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-385 23	² Pool Code 59945	³ Pool Name Triste Draw Delaware, West
⁴ Property Code 35579	⁵ Property Name JAMES 20 FEDERAL	⁶ Well Number 4
⁷ OGRID No. 10155	⁸ Operator Name HARVARD PETROLEUM CORP.	⁹ Elevation 3675

¹⁰ Surface Location

UL or lot no. E	Section 20	Township 23-S	Range 32-E	Lot Idn	Feet from the 1980	North/South line NORTH	Feet from the 660	East/West line WEST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
¹² Dedicated Acre 40 ✓	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<div><div>16</div><div>1980'</div><div>660'</div><div>LAT N32.29181 LON W103.70308</div></div>					<p>¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><u>George R. Smith</u> 5/24/06 Signature Date</p> <p>George R. Smith, agent Printed Name</p>	
						<p>¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>OCTOBER 14, 2005 Date of Survey</p> <p><u>DAN R. REDDY</u> Signature and Seal of Professional Surveyor.</p> <p>5412 Certificate Number</p> <p>DAN R. REDDY PE & PS #5412</p>

APPLICATION FOR DRILLING

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4
1980' FNL & 660' FWL, Sec. 20-T23S-R32E
Lea County, New Mexico
Lease No.: NM-0559539
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Harvard Petroleum Corp. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
2. The estimated tops of geologic markers are as follows:

Rustler	1120'	Lower Brushy Canyon	8220'
Salt	1470'	Bone Spring	8470'
Delaware	4640'	Bone Spring Sand	8560'
Cherry Canyon	5660'	T.D.	8700'
Brushy Canyon	7300'		

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 300'.

Oil: Possible in the Delaware 4640 - 8470' and the Bone Spring below 8470'.

Gas: None expected.

4. Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	54.5#	J-55	ST&C	550'	Circ. 400 sx "C"
11"	8 5/8"	24.0#	J-55	ST&C	2,500'	
11"	8 5/8"	32.0#	J-55	ST&C	4,500'	Circ. 1200 sx 35/65 Poz + 100 sx "H"
7 7/8"	5 1/2"	15.5#	K-55	LT&C	6,850'	450 sx 35/65/ Poz + 100 sx "C" neat
7 7/8"	5 1/2"	15.5#	K-55	LT&C	8,700'	400 sx 15/61/11 Poz-C-CSE, 2 stage

5. **Proposed Control Equipment:** A 10" 3000 psi wp Shaffer Type "E" BOP will be installed on the 13 3/8" casing and operated as a 2M system. Casing and BOP will be tested with the rig pump before drilling out with 11". Request waiver to test BOPE and the 8 5/8" casing to a maximum of 2000 psi wp in accordance with Onshore Oil & Gas Order No. 2. See Exhibit "E".

6. MUD PROGRAM:	MUD WEIGHT	VIS.	W/L CONTROL
0' - 550': Fresh water w/gel spud mud:	8.4 - 9.0 ppg	32 - 38	No W/L control
550' - 1400': Fresh water w/gel spud mud	8.4 - 9.0 ppg	32 - 38	No W/L control
1400' - 4500': Cut Brine w/gel & lime:	9.0 - 10.0 ppg	28 - 30	No W/L control
4500' - 8700': Fresh Wtr w/gel & starch:	8.4 - 8.8 ppg	29 - 31	W/L control 10-15 cc +/-

7. **Auxiliary Equipment:** Blowout Preventer, Kelly cock, flow sensors and stabbing valve.

8. Testing, Logging, and Coring Program:

Drill Stem Tests: None unless conditions warrant.

Logging: T.D. to 4500': GR-CNL-LDT-DLL

T.D. to Surface: GR-Neutron

Coring: Rotary sidewall as dictated by logs.

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4

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9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 3828 psi and a surface pressure of 1914 psi with a temperature of 147°.
10. H₂S: None expected. None in previous wells.
11. Anticipated starting date: October 16, 2006
Anticipated completion of drilling operations: Approximately 25 days.

MULTI POINT SURFACE USE AND OPERATIONS PLAN

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4
1980' FNL & 660' FWL, Sec. 20-T23S-T32E
Lea County, New Mexico
Lease No.: NM-0559539
(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well; the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

1. EXISTING ROADS:

- A. Exhibit "A" is a portion of a BLM Topographic map showing the location of the proposed well as staked. The well site location is approximately 37 road miles east of Carlsbad, NM. Traveling east of Carlsbad on County Rd #605 and NM Highways 31 and 128, there will be 33.5 miles of paved highway and 3 miles of oilfield roads.
- B. Directions: Travel southeast from Carlsbad, NM on County Rd. # 605, the refinery road, for 12.5 mile to NM Highway #31. Turn left on NM #31 for approximately 2.5 miles, and then turn east onto NM Highway # 128 for 17.4 miles. Turn left (north) onto CR-29 and continue north for 1.7 miles; turn right (east) for 1.6 miles to the Littlejack Fed. #1 well pad. The road continues east for 1.0 mile the James Fed. #3 well site. Continue east to the James Federal #4 well pad then north for .5 to James Fed. #7 well Pad. The proposed access road will start at the SW corner of this pad and run west for 850' to the SE corner of the proposed James Fed. #12 well site. Continue north for .5 mile to the SE corner of the proposed James 20 Fed., #1 well site. The proposed access road will start at the NE corner of this pad and run NW for 1000 feet to the SW corner of the James 20 Fed. #2 well site; then 1000 feet west to the SE corner of the proposed well site.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The proposed access road will be approximately 1000 feet long and 12 feet in width. The proposed and existing roads are color coded on Exhibit "A".
- B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche. The surface will be properly drained.
- C. Turnouts: One turnout may be required increasing the road width to 20 feet for passing.
- D. Culverts: None.
- E. Cuts and Fills: Minor cuts of 2 - 3 foot dunes will be required.
- F. Gates, Cattle guards. None required.
- G. Off lease right of way: Re. R/W No. NM-115374.

3. LOCATION OF EXISTING WELLS:

- A. Existing wells within a two-mile radius are shown on Exhibit "C".

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4

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4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES;

- A. Harvard Petroleum Corp. has production facilities on the lease at this time.
- B. If the well proves to be commercial, the necessary production facilities will be installed on the drilling pad. A 3" poly SDR 11 surface oil flow line will run east, parallel to the access road, to the James 20 Fed. No. 2 and then south to the tank battery at the James Federal, #3 in section 29.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads

6. SOURCE OF CONSTRUCTION MATERIALS:

- A. Caliche for surfacing the proposed access road and well site pad will be obtained from the location, if available, or from a State pit in SE4 SW4 Sec. 32-T23S-R32E. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. All pits will be fenced with normal fencing materials to prevent livestock from entering the area.
- D. Water produced during operations will be collected in tanks at the James Fed., Well #1 water disposal well, a BLM approved disposal system.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

- A. None required.

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4

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9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged, 500' X 500'.
- B. Mat Size: 255' X 160', plus 120' X 120' reserve pits on the north.
- C. Cut & Fill: The location will require a 4-foot cut on the north with fill to the south.
- D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.

10. PLANS FOR RESTORATION OF THE SURFACE:

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to be worked.

11. OTHER INFORMATION:

- A. Topography: The proposed well site and access road are located on top of Bootleg Ridge with an overall 1.4% slope from the southwest to the northeast. The location has an elevation of 3675' GL.
- B. Soil: The topsoil at the well site is a brown to yellowish-red fine sand to a fine sandy loam soil with occasional small sand dunes. There should be caliche at a depth of 40 to 60 inches. The soil is part of the Maljamar and Palomas fine sands land complex.
- C. Flora and Fauna: The vegetation cover has a very sparse to fair grass cover of three-awn and bluestem, with the primary cover being plants of mesquite, yucca, broomweed, shinnery oak brush, sage, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelope, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: None.
- E. Residences and Other Structures: None in the immediate vicinity, except oil well production facilities.
- F. Land Use: Cattle grazing.

HARVARD PETROLEUM CORP.

James 20 Federal, Well No. 4

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11. OTHER INFORMATION: cont....

- G. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- H. There is no evidence of archaeological, historical or cultural sites in the staked area. Archaeological Survey Consultants, P. O. Box D, Roswell, NM 88202, are conducting an archaeological survey and their report will be submitted to the appropriate government agencies.

12. OPERATOR'S REPRESENTATIVE:

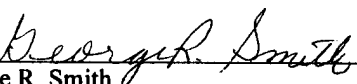
- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

Jeff Harvard
HARVARD PETROLEUM CORP.
P. O. Box 936
Roswell, NM 88202
Office Phone: (505) 623-1581
Cell Phone: (505) 626-7938

13. CERTIFICATION:

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist the statements made in the plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Harvard Petroleum Corp. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

May 23, 2006


George R. Smith
Agent for: Harvard Petroleum Corp.

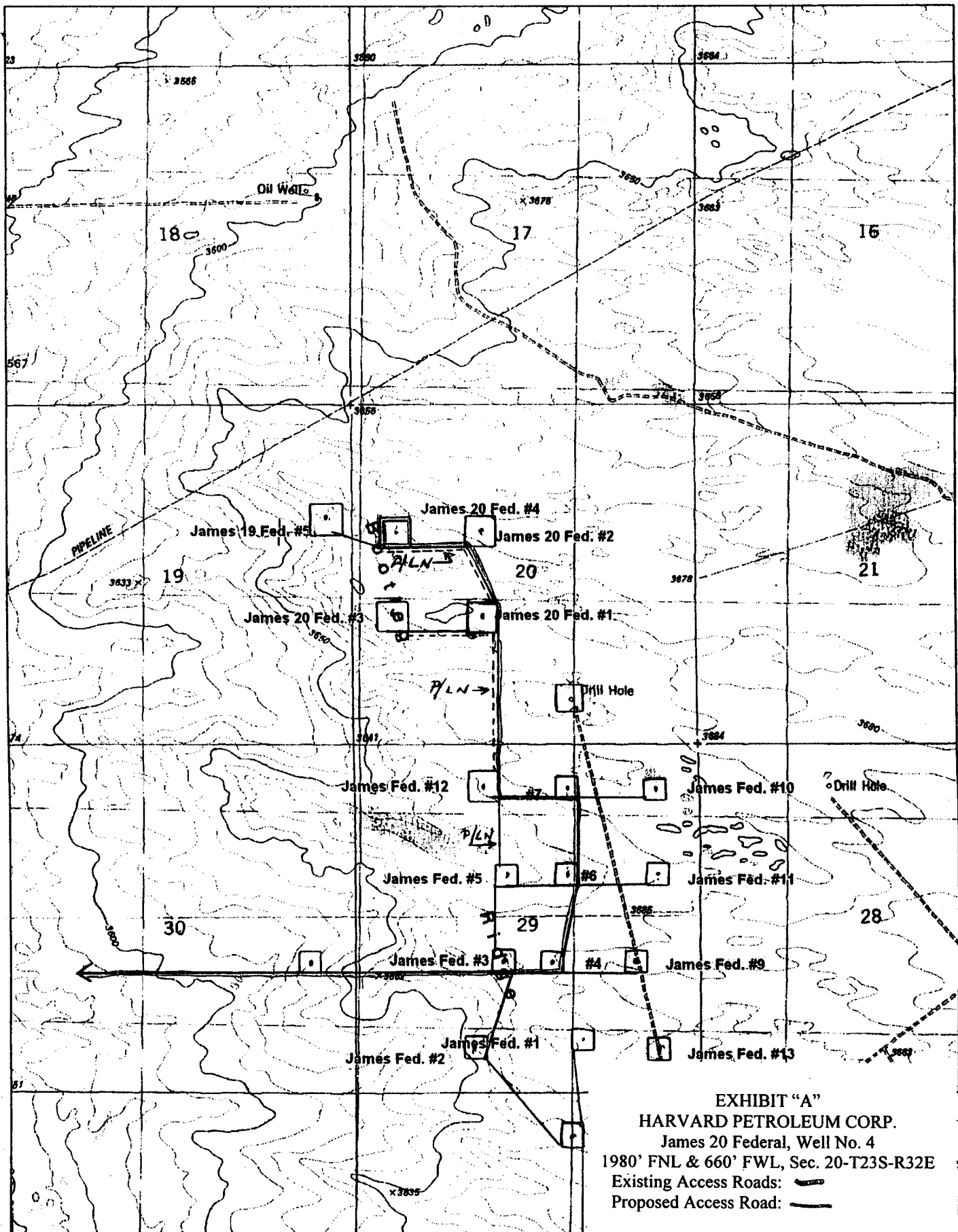
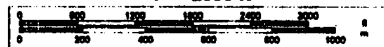


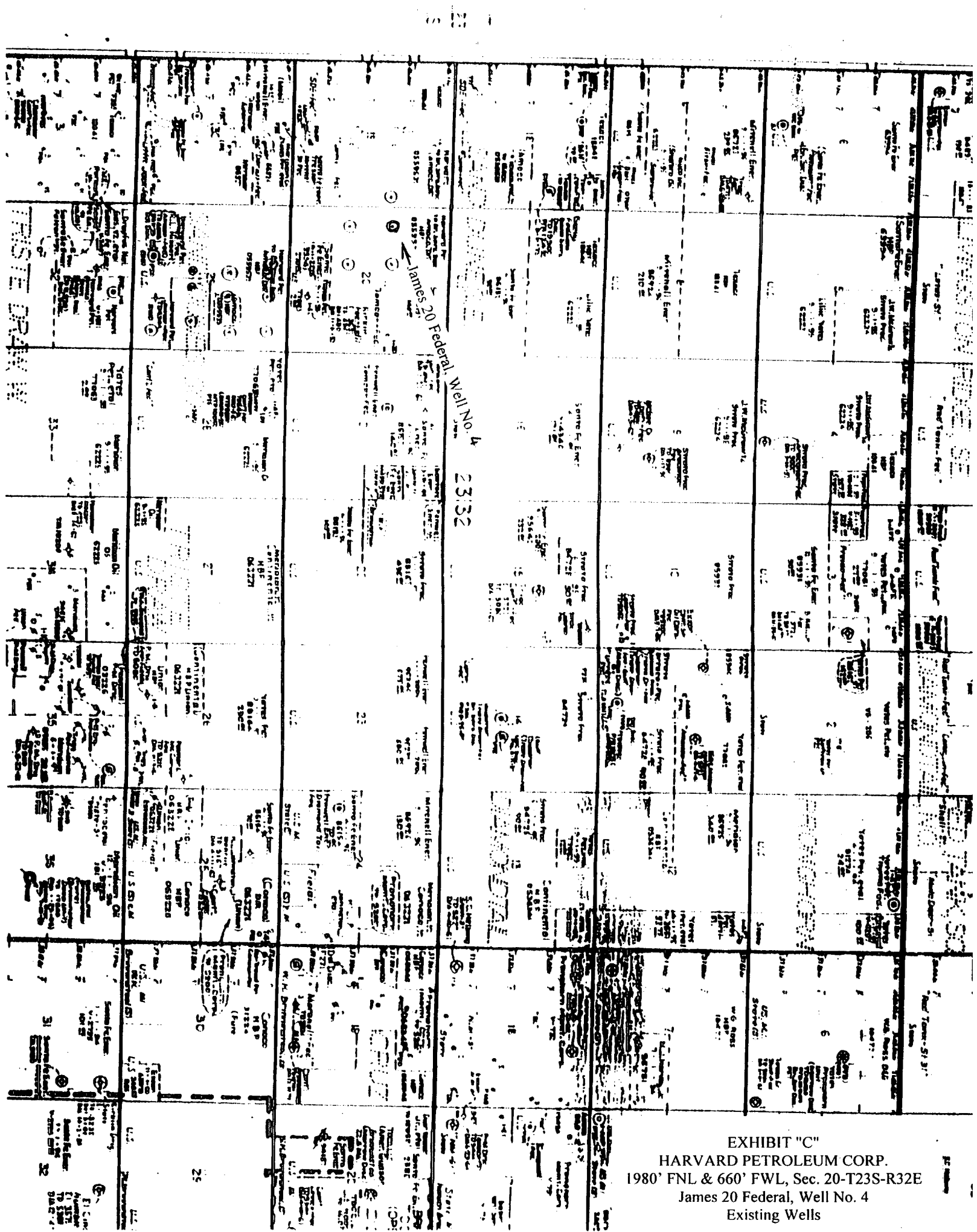
EXHIBIT "A"
 HARVARD PETROLEUM CORP.
 James 20 Federal, Well No. 4
 1980' FNL & 660' FWL, Sec. 20-T23S-R32E
 Existing Access Roads: ———
 Proposed Access Road: ———

DeLORME

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 www.delorme.com

Scale 1 : 24,000
 1" = 2000 ft





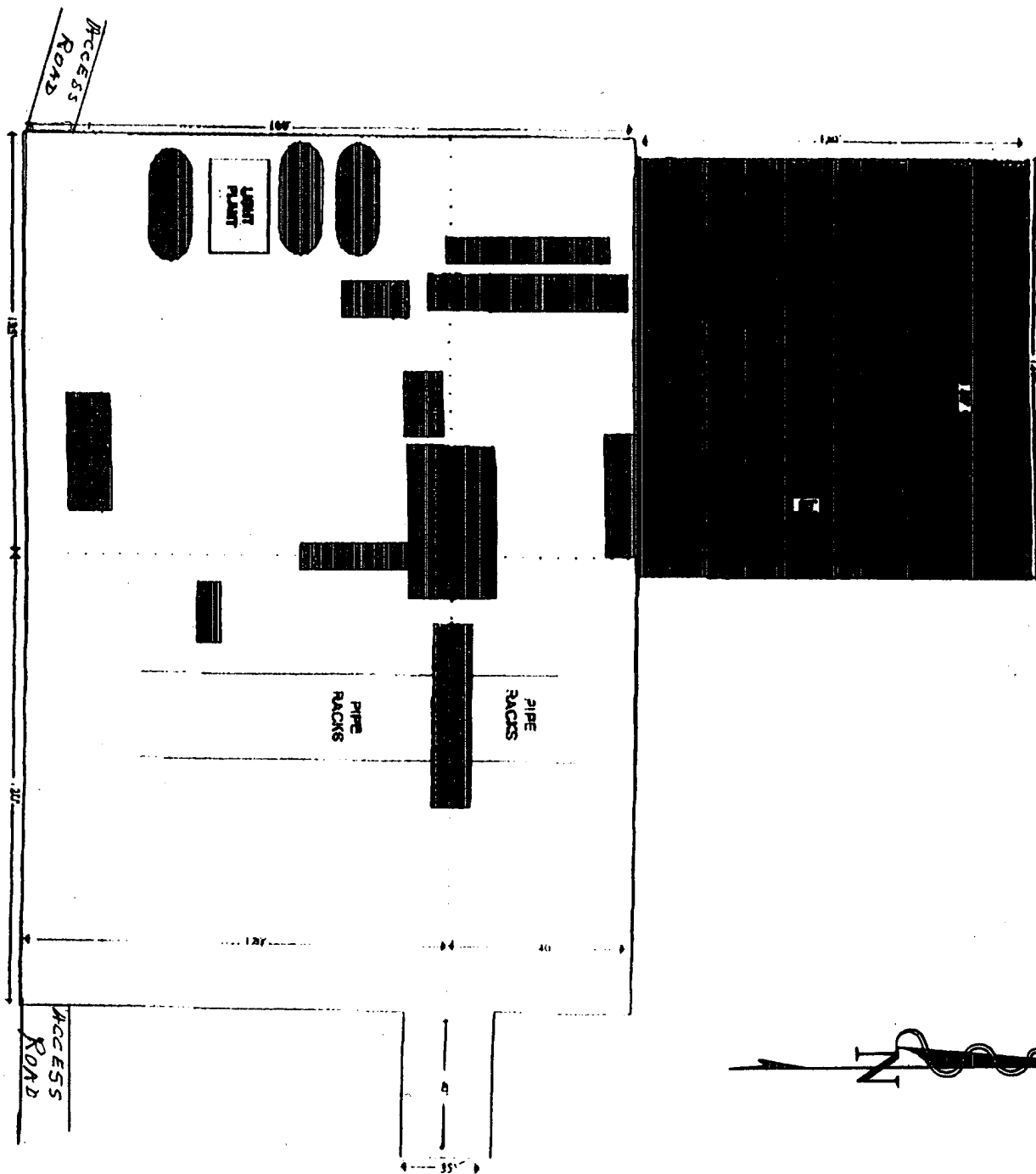


EXHIBIT "D"
 HARVARD PETROLEUM CORP.
 James 20 Federal, Well No. 4
 Pad & Pit Layout

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-144
March 12, 2004

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Harvard Petroleum Corp. Telephone: (505) 623-1581 e-mail address: _____

Address: P.O. Box 936 Roswell, NM 88202

Facility or well name: James20 Federal, Well No. 4 API # 30-026-38523 U/L or Qtr/Qtr SW4NW4 Sec 20 T 23S R 32E

County: Lea Latitude N 32.29181 Longitude W 103.70308 NAD: 1927 ☐ 1983X Surface Owner Federal ☐ State ☐ Private ☐ Indian ☐

Pit

Type: Drilling ☒ Production ☐ Disposal ☐

Workover ☐ Emergency ☐

Lined ☒ Unlined ☐

Liner type: Synthetic ☐ Thickness 12 mil Clay ☐ Volume 10,000

+/- bbl

Below-grade tank

Volume: bbl Type of fluid:

Construction material:

Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet

(20 points)

50 feet or more, but less than 100 feet

(10 points)

100 feet or more

(0 points)

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes

(20 points)

No

(0 points)

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

(20 points)

200 feet or more, but less than 1000 feet

(10 points)

1000 feet or more

(0 points)

Ranking Score (Total Points)

-0-

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location:

onsite ☐ offsite ☐ If offsite, name of facility _____ (3) Attach a general description of remedial action taken including remediation start date and

end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: May 24, 2006

Printed Name/Title George R. Smith, Agent for Harvard Petroleum Corp.

Signature

George R. Smith

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Date: 10/12/06

Printed CHRIS WILLIAMS - DIST. SUPV

Signature

Chris Williams